



#### **Disaster Management Framework**

Mitigation	Hazard assessment     District analysis
	Mitigation strategies and vulnerability reduction     Integration of DRR in development activities
Preparedness	Warning prediction and dissemination     Emergency preparedness     Education, training, and public awareness
Response	Mobilization     Needs assessment     Rescue and evacuation     Emergency assistance
Recovery	Rehabilitation     Reconstruction

#### **Coastal Management Framework**

Assessment & Planning	Coastal resource and hazard assessment     Plan formulation and revision
Implementation	Shoreline/foreshore management     Marine zoning     Marine protected area management     Coastal vegetation/mangrove management     Upland/watershed management     Environment-friendly enterprise development
Monitoring & Evaluation	Annual Progress Review     Biophysical/socioeconomic monitoring
Governance	Legal and policy framework     Institutional Capacity     Coastal Law Enforcement
Education & Outreach	Public awareness     Formal and informal education



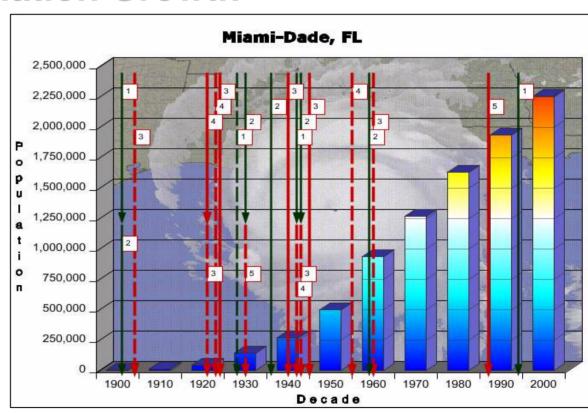






#### **U.S. Coastal Population Growth**

- Coastal Counties comprise 17% of US land area and account for 52% of total population (139 million people)
- Projected increase by 26 million between now and 2015
- Many of these people have not experienced a coastal hazard



Does your community have population growth issues in high-hazard areas? How can we become more resilient?





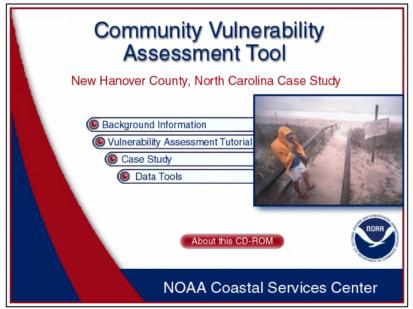






#### **Community Vulnerability Assessment Tool (CVAT)**

Description: The CVAT is a peer reviewed methodology for conducting multi-hazard risk and vulnerability assessments at the community level.













#### **CVAT Overview**

The general methodology is included as a tutorial that steps the user through a "community level" process of analyzing the following vulnerability factors with respect to multiple hazards:

physical



social



environmental



economic



In addition to demonstrating the vulnerability assessment methodology, GIS is illustrated as a valuable resource for conducting hazards-related analyses in a case study format



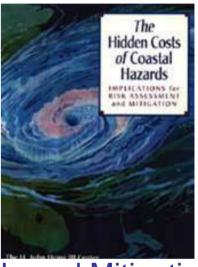






#### **CVAT Background**

• The foundation for the CVAT methodology was established by the Heinz Center Panel on Risk, Vulnerability, and the True Cost of Hazards (1999).



- Pilot Project to Support and Encourage Coastal Hazard Mitigation
- Partnership:
  - NOAA Coastal Services Center
  - -Federal Emergency Management Agency (FEMA)
  - -New Hanover County Department of Emergency Management









#### Do you know...

what your most costly hazard risks are?
where your highest risk locations are?
which of your critical facilities are most vulnerable to hazards?
where your most vulnerable populations live?
how susceptible your local economy is to hazards?
what environmental resources are most at risk?
what your best opportunities to mitigate future impacts are?

CVAT can help answer these questions









#### **CVAT Seven Step Process**

- Hazard Identification
- Hazard Analysis
- Critical Facilities Analysis
- Societal Analysis
- Economic Analysis
- Environmental Analysis
- Mitigation Opportunities Analysis









#### **Step 4: Societal Analysis**

#### Input

Poverty
Age
Minority Population
No Vehicles
Female Households
Rental Households
Public Assistance

Where are your high-need neighborhoods?

How vulnerable are they to hazard impacts?

Societal Analysis

Output

Geographically defined areas of high risk coupled with minimal personal resources for hazard recovery. Can be used to develop mitigation strategies and target high-need locations.





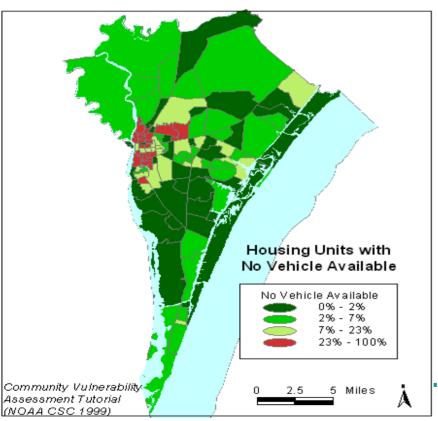


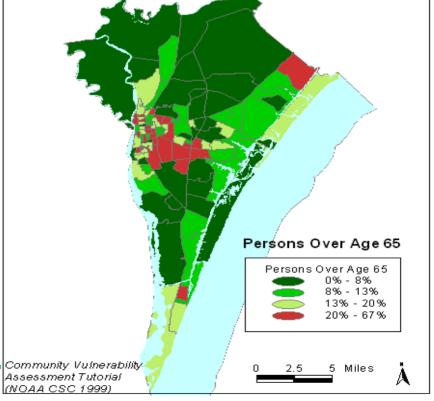


#### **Step 4: Societal Analysis**

Where are your high-need neighborhoods?

How vulnerable are they to hazard impacts?



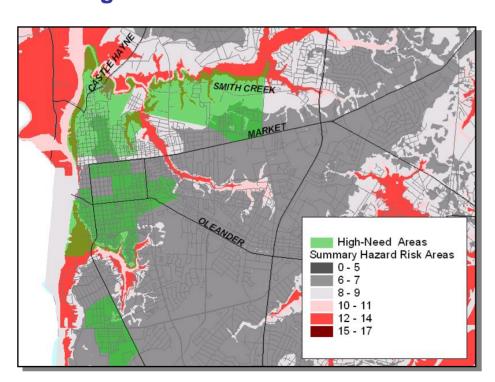


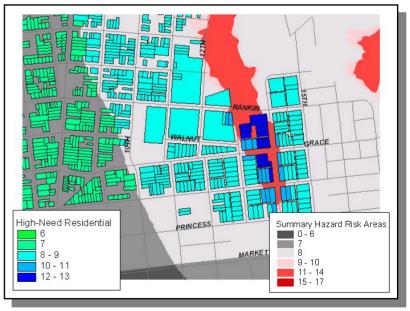




#### **Step 4: Societal Analysis**

**Step 4b:** Identify intersections of special consideration populations with high-risk areas.













#### **Applications of the CVAT**

#### **Center-funded Assessments**

Maui County, Hawaii - County-wide Assessment

Oregon and Washington – Community Assessment focused on Ports and Harbors

Rhode Island – Statewide Assessment

Brevard & Volusia Counties, FL – County-wide Assessments

Tutuila, American Samoa – Island-wide Assessment

#### **Independent Assessments**

Caribbean – Grenada and Barbuda National Assessments

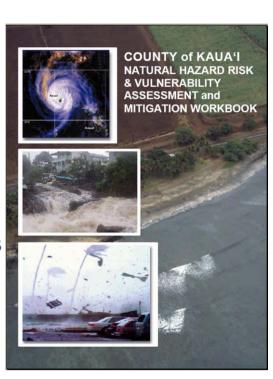
New Hampshire – Statewide and County-wide Assessment

Hawaii – Statewide and County-wide Assessment













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